

IN THE SPECIFICATION:

Please substitute the paragraph at page 2, lines 6-12 for the following.

As another method, Japanese Laid-Open Patent Application (JP-A) Hei 06-236231 has proposed such a scheme that an electromagnetic induction interaction is caused between a metal coil and is incorporated in a pen and a metal coil provided to a detecting device disposed under a display apparatus, thereby to permit detection of a designated position.

Please substitute the paragraph at page 2, lines 13-20 for the following.

Such a so-called ~~an~~ electromagnetic induction-type coordination position detection apparatus is used in combination with a display apparatuses to permit handwriting input with a special-purpose pen. Thus, it can be considered that a wearable PC of power and cost saving type or a paper like display in which a user can take notes is realized.

Please substitute the paragraph starting at page 2, line 21 and ending at page 3, line 8 for the following.

FIG. 9 is a schematic view showing an embodiment of a conventional display apparatus having a pen input function. The display apparatus includes a display panel P_0 for displaying, e.g., an image or a character, an input pen 2 for inputting various pieces of information, and a sensor unit S_0 for sensing (detecting) a position of the input pen 2 according to ~~to other~~ to an electromagnetic induction scheme. In the input pen 2, a resonance circuit is disposed, and in the sensor unit S_0 , a sensor coil is disposed, thus permitting detection of a coordinate position according to the electromagnetic induction scheme. A_0 represents a plate-like member and is integrally formed with the display panel P_0 in order to maintain a strength of the display panel P_0 .

Please substitute the paragraph at page 5, lines 10-17 for the following.

The electrophoretic display apparatus has a memory characteristic, different from most of liquid crystal apparatuses. The power of the display apparatus can be held in an off state when the display operation is kept, so that the display apparatus is advantageous in the case where it is assumed that the display apparatus is used in various environments as in the wearable PC.

Please substitute the paragraph at page 6, lines 1-12 for the following.

However, when the above described electromagnetic induction type coordination position detection apparatus is mounted to such a display apparatus using the metal substrate, the electroconductive metal substrate is interposed between the position detection device and the pen, so that an electromagnetic field produced from the position detection device and the pen generates eddy-current in the metal substrate. For this reason, there ~~has~~ has arisen such a problem that the electromagnetic field is attenuated to worsen a sensitivity for position detection.

Please substitute the paragraph at page 7, lines 17 and 18 for the following.

The present invention ~~has accomplished in order~~ accomplishes to solve the above described problems.

Please substitute the paragraph at page 10, lines 19-21 for the following.

Figures 1(a) and 1(b) are schematic sectional views showing a display apparatus according to a First Embodiment of the present invention.

Please substitute the paragraph at page 10, lines 22-24 for the following.

Figure 2 is a view showing a cross-section and wiring state of a part of the display apparatus of the First Embodiment.

Please substitute the paragraph at page 11, lines 2-3 for the following.

Figure 5 is a schematic view showing a general structure of a display apparatus according to a Second Embodiment of the present invention.

Please substitute the paragraph at page 11, lines 5 and 6 for the following.

Figures 6, 7 and 8 are views showing other examples of the display apparatus of the Second Embodiment.

Please substitute the paragraph at page 11, lines 19-21 for the following.

Figures 1(a) and 1(b) schematically show a display apparatus according to the First Embodiment of the present invention.

Please substitute the paragraph at page 11, line 24 and ending at page 12, line 5 for the following.

A display apparatus 1 includes a display portion 170, a driving portion 160 constituted by TFTs and their wiring for driving the display portion 170, and a sensor portion 150 for detecting a coordinate position. These portions are laminated on a substrate 100. As the display portion 170, an electroconductive display apparatus having a memory characteristic is used, and the electroconductive display apparatus is driven by the TFTs.

Please substitute the paragraph at page 13, lines 2-10 for the following.

The substrate 100 is formed of a metal sheet to exhibit electroconductivity and is surface-coated with an insulating layer 101. On the substrate, the electromagnetic induction type position detection sensor portion 150 and the driving portion 160 having a TFT matrix are laminated. The metal sheet has a flexibility to such an extent that the entire display apparatus is flexible and causes to crack or ~~breakage~~ break against repetitive flexion deformation.

Please substitute the paragraph at page 14, lines 6-20 for the following.

As shown in FIG. 2, the position detection sensor 150 ~~has~~ has a lamination structure including the electromagnetic induction coil layer 120 for performing sensing in the X-axis direction and the electromagnetic induction coil layer 140 for performing sensing in the Y-axis direction. The X-axis sensing coil layer 120 includes a plurality of coils 102 each ~~arrange in~~ arranged in parallel with each other and extended in the Y-axis direction to form a loop. Each of the coils 102 is led from both ends of the loop to the outside of the coil layer 120. The coils 102 effect sensing in the X-axis direction. The number and density of the coils 102 are determined depending on an accuracy of positional coordinates to be subjected to the sensing.

Please substitute the paragraph starting at page 16, line 26 and ending at page 17, line 11 for the following.

As shown in FIG. 4, the display portion 150 (FIG. 2) has a display surface by arranging the pixels electrodes 114, as one (group) of the electrodes of the display device, in a matrix. The other electrode (group) of the display device is formed on an opposite substrate (not shown) or a side surface of a partition wall (not shown) located at a peripheral portion of the pixels, and a

common potential is applied to all the ~~pixel~~ pixels. Each of the pixels is constituted by an electrophoretic device including electrophoretic particles and a liquid for dispersing and holding the electrophoretic particles therein.

Please substitute the paragraph at page 18, lines 20-22 for the following.

Hereinbelow, the Second Embodiment of the present invention will be described with reference to Figures 5 - 8.

Please substitute the paragraph at page 18, lines 23-27 for the following.

A display apparatus used in this embodiment, similarly as in the First Embodiment, displays various pieces of information such as an image and character, and permits a coordinate detection according to the electromagnetic induction scheme.

Please substitute the paragraph starting at page 19, line 15 and ending at page 20, line 4 for the following.

On a lower surface, of the substrate 100, opposite from the upper surface on which the drive and display portions 160 and 170 are disposed, a position detection sensor layer (portion) 150 is disposed. The position detection sensor portion 150 has the same structure as in the First Embodiment shown in FIGS. 1(a), 1(b) and 2 except that the positional relationship between the substrate 100 and the position detection sensor portion 150 is inverted. The position detection sensor portion 150 has such a substrate that position sensor coils in an X-axis direction and position sensor coils in a Y-axis direction perpendicularly, intersect with each other via an insulating layer and are laminated on the substrate. These sensor coils may be formed at the

lower surface of the substrate 100 or applied to the lower surface of the substrate 100 after being once formed on another substrate.

Please substitute the paragraph at page 20, lines 5-8 for the following.

The sensor portion 150 is an electromagnetic induction type digitizer identical to that used in the First Embodiment and has a plurality of sensor coils (looped coils).

Please substitute the paragraph starting at page 24, line 27 and ending at page 25, line 15 for the following.

A substrate 100 is a thin electroconductive SUS foil or plate. An insulating film 101 disposed on the substrate 100 is formed of an insulating material such as SiN or a resin material. As wiring (metal coils) 102 and 104, a wiring material of Al which exhibits a low electric resistivity is used but in the case where there is a subsequent step ~~includes~~ including a production process performed at a temperature that exceeds a melting temperature of Al, a metal material such as Cr, Ta or Al-Nd is used instead of Al. Such a metal material is vapor-deposited on the insulating film by sputtering and thereon, a photoresist is applied and subjected to selective exposure and development, followed by etching of the metal film to form a loop-like wiring portion. As a TFT 109, a thin film of an amorphous semiconductor is used.

Please substitute the paragraph at page 25, lines 16-18 for the following.

More specifically, the display apparatus of the First Embodiment of the present invention can be prepared through the following production steps.